Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1-12 (Cancelled)

13. (Currently amended) A method of generating an optical image of an animate subject, said image being useful in the diagnosis of endometriosis or in the follow up of progress of endometriosis, said method involving administering a fluorescent contrast agent intravenously to said subject and generating an optical image of at least a part of said subject to which said contrast agent has distributed, wherein said optical imaging contrast agent has affinity for an abnormally expressed biological target associated with endometriosis, wherein said target is the estrogen receptor and said contrast agent is of formula I

V-L-R (I)

wherein V is ~~one or more vector moieties~~ an organic drug-like small molecule having affinity for the estrogen receptor ~~an abnormally expressed target in endometriosis~~, L is a linker moiety or a bond and R is one or more reporter moieties detectable in *in vivo* optical imaging and having an absorption maximum in the region 600 to 1300 nm, and wherein the contrast agent has a molecular weight below 10000 Daltons.

14. (Previously presented) The method as claimed in claim 13, wherein the contrast agent comprises a contrast agent substrate, wherein the target is an abnormally expressed enzyme, such that the contrast agent changes pharmacodynamic properties and/or pharmacokinetic properties upon a chemical modification from a contrast agent substrate to a contrast agent product upon a specific enzymatic transformation.

15. (Previously presented) The method as claimed in claim 14 wherein the contrast agent changes binding properties to specific tissue, membrane penetration properties, protein binding or solubility properties upon the chemical modification.

16. (Cancelled) The method as claimed in claim 13 wherein the contrast agent has affinity for any of the targets selected from the group of angiogenesis targets, adhesion molecules, estrogen receptors, progesterone receptors,
Cathepsin H and Cathepsin S, aromatase, reductase, CD10, endoglin, haptoglobin and cyclin D2.

17. (Cancelled) The method as claimed in claim 13 wherein V is selected from peptides, peptoid moieties, oligonucleotides, oligosaccharides and lipid-related compounds and traditional organic drug-like small molecules.

18. (Withdrawn) A contrast agent as claimed in claim13 wherein R is a dye that interacts with light in the wavelength region from the ultraviolet to the infrared part of the electromagnetic spectrum.

19. (Previously presented) The method as claimed in claim 13 wherein R is a cyanine dye.

20. (Previously presented) The method of claim 13, where the contrast agent is provided as a pharmaceutical composition, said composition comprising a contrast agent as defined in claim 13 together with at least one pharmaceutically acceptable carrier or excipient.

21 (Withdrawn) A method of generating an optical image of an animate subject involving administering a contrast agent to said subject and generating an optical image of at least a part of said subject to which said contrast agent has distributed, characterized in a contrast agent as defined in claim 13 is used.

22. (Previously presented) A method of diagnosis of either: (i) endometriosis; or (ii)-the follow up of the progress of endometriosis development; or (iii) the follow up treatment of endometriosis; which comprises the method as defined in claim 13.